

**PCT**

NOTIFICATION OF TRANSMITTAL  
OF COPIES OF TRANSLATION  
OF THE INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY  
(CHAPTER I OR CHAPTER II  
OF THE PATENT COOPERATION TREATY)  
(PCT Rules 44bis.3(c) and 72.2)

To:

SONN & PARTNER  
Riemergasse 14  
A-1010 Wien  
AUTRICHE



Date of mailing (day/month/year)

09 November 2006 (09.11.2006)

Applicant's or agent's file reference  
R 44447**IMPORTANT NOTIFICATION**International application No.  
PCT/AT2004/000394International filing date (day/month/year)  
10 November 2004 (10.11.2004)

Applicant

FRONIUS INTERNATIONAL GMBH et al

**1. Transmittal of the translation to the applicant.**

The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter I).



The International Bureau transmits herewith a copy of the English translation of the international preliminary report on patentability (Chapter II).

**2. Transmittal of the copy of the translation to the designated or elected Offices.**

The International Bureau notifies the applicant that copies of that translation have been transmitted to the following designated or elected Offices requiring such translation:

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The following designated or elected Offices, having waived the requirement for such a transmittal at this time, will receive copies of that translation from the International Bureau only upon their request:

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**3. Reminder regarding translation into (one of) the official language(s) of the elected Office(s).**

The applicant is reminded that, where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary report on patentability (Chapter II).

It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned within the applicable time limit (Rule 74.1). See Volume II of the PCT Applicant's Guide for further details.

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Yolaine Cussac

**TRANSLATION**

**PATENT COOPERATION TREATY**

**PCT**

**INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY**

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference <b>R 44447</b>	<b>FOR FURTHER ACTION</b>	See Form PCT/IPEA/416
International application No. <b>PCT/AT2004/000394</b>	International filing date (day/month/year) <b>10.11.2004</b>	Priority date (day/month/year) <b>25.11.2003</b>
International Patent Classification (IPC) or national classification and IPC <b>B23K9/067, B23K9/09</b>		
Applicant <b>FRONIUS INTERNATIONAL GMBH</b>		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> (sent to the applicant and to the International Bureau) a total of _____ sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																									
<p>4. This report contains indications relating to the following items:</p> <table><tr><td><input checked="" type="checkbox"/></td><td>Box No. I</td><td>Basis of the report</td></tr><tr><td><input type="checkbox"/></td><td>Box No. II</td><td>Priority</td></tr><tr><td><input type="checkbox"/></td><td>Box No. III</td><td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td></tr><tr><td><input type="checkbox"/></td><td>Box No. IV</td><td>Lack of unity of invention</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. V</td><td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VI</td><td>Certain documents cited</td></tr><tr><td><input type="checkbox"/></td><td>Box No. VII</td><td>Certain defects in the international application</td></tr><tr><td><input checked="" type="checkbox"/></td><td>Box No. VIII</td><td>Certain observations on the international application</td></tr></table>		<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application																							

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

Box No. I

Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_ which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-17 \_\_\_\_\_ as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the claims:
- nos. 1-11 \_\_\_\_\_ as originally filed/furnished
- nos.\* \_\_\_\_\_ as amended (together with any statement) under Article 19
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- nos.\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☒ the drawings:
- sheets 1-8 \_\_\_\_\_ as originally filed/furnished
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- sheets\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	<u>1-11</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1-11</u>	NO
Industrial applicability (IA)	Claims	<u>1-11</u>	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

1. Citations

Reference is made to the following documents:

- D1: PATENT ABSTRACTS OF JAPAN, Vol. 017, No. 123  
(M-1380), 15 March 1993 (1993-03-15),  
& JP 04 305374 A (DAIHEN CORP), 28 October 1992  
(1992-10-28)
- D2: EP-A-1 197 285 (LORCH SCHWEISSTECHNIK GMBH),  
17 April 2002 (2002-04-17)
- D3: DE 195 07 649 A1 (FRONIUS SCHWEISMASCHINEN KG),  
14 September 1995 (1995-09-14)
- D4: US-A-3 657 512 (E.J. BONDARENKO), 18 April 1972  
(1972-04-18)
- D5: GB-A-1 225 054 (R. KREEB ET AL), 17 March 1971  
(1971-03-17)
- D6: US-A-5 965 038 (Y. NOMURA ET AL), 12 October 1999  
(1999-10-12)

2. Claims 1 to 7

Document D4 discloses (the references in parentheses are to D4) a method for contactless ignition of a

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

welding arc (column 1, lines 5 to 22, and column 2, lines 10 to 26). The subject matter of claim 1 differs by virtue of the method steps specified in the characterising part.

The problem addressed by the present invention can thus be seen as that of devising an ignition method that allows exact or reliable and very fast ignition of the arc. The solution proposed in claim 1 of the application cannot be considered inventive (PCT Article 33(3)) for the following reasons:

- a. The possibility of using multiple pulse bursts to initiate an arc is already known from document D4 (see in particular column 3, lines 63 to 73). In order to achieve the same technical effect (albeit for a different method, based on the Lift Arc principle), D1 uses multiple pulse bursts with a specifiable frequency or duration (see figure 2 and the abstract). To a person skilled in the art wishing to achieve the same purpose in a similar arc ignition method as known from document D4, it is obvious that these features can be used with the same result in the context of D1. The skilled person would thus arrive at a method as defined in claim 1 without making an inventive contribution.

Dependent claims 2 to 7 do not contain any features that meet the PCT requirements in respect of novelty or inventive step (PCT Article 33(2) and 33(3)) when combined with the features of any of the back-referenced claims. For claims 2 and 3, see D1; for

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

claims 6 and 7, see D2; and for claims 2, 3, 6 and 7, see also D3; routine choice for a person skilled in the art (for high-frequency ignition of an arc, see in particular D4).

3. Claims 8 to 11

Document D4, which is considered to be the closest prior art, discloses (see figures 1 and 2) a circuit for contactless ignition of a welding arc (column 1, lines 5 to 22, and column 2, lines 27 to 53). The subject matter of claim 8 differs in that the switch is a magnetic throttle which allows high-frequency switching of the ignition pulses.

The problem addressed by the present invention can thus be seen as that of designing a circuit for contactless ignition of a welding arc that allows high-frequency switching of the ignition pulses.

The possibility of using high-frequency pulses to ignite an arc is already known from document D4 (see column 3, lines 63 to 73). This technical effect is well established for magnetic switches and has already been used for the same purpose in other types of circuit arrangement (see documents D5 and D6). A person skilled in the art wishing to achieve the same purpose with a circuit as described in D4 could easily apply these features in the context of D5 or D6 with similar results. It would thus be possible to arrive at a circuit as defined in claim 8 without making an inventive contribution.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

The subject matter of claim 8 is therefore not  
inventive (PCT Article 33(3)).

Dependent claims 9 to 11 do not contain any features  
that meet the PCT requirements in respect of inventive  
step (PCT Article 33(3)) when combined with the  
features of any of the back-referenced claims. For  
claims 10 and 11, see D4; claim 9 relates to a choice  
which is routine for a person skilled in the art.

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/AT2004/000394

Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

References to combinations of previous claims are not permitted (PCT Rule 6.4(a)). The phrase "or more" in claims 4, 5 and 6 should therefore be deleted.